

Teaching Students (and Principals)

Hector Timourian

Sometimes school principals can surprise you.

Educators have responded with excitement at the Lab's efforts to help them teach better science. The following anecdote illustrates that this excitement went beyond learning good science.

When we were conducting summer institutes in 1985 and 1986, we started to recognize that the teachers also needed the support of their principals if they were going to teach science with more hands-on activities. "We can't have the kids be too rambunctious in class when a principal visits our classroom." With the encouragement of the National Science Foundation (NSF), which was funding some of our workshops, we started workshops for the teachers' principals.

During the two-day workshops, the principals were introduced to learning science by actively trying to solve problems instead of memorizing scientific facts.

One such activity was to have them predict whether a simple paper helicopter would revolve clockwise or counter-clockwise as it was allowed to slowly come down. Two male principals got into a heated discussion, not unlike what we had experienced with fourth graders. They were arguing whether it mattered if

one observed the helicopter as it slowly descended from above or from below.

To answer their question, one of them climbed on top of the table, and the other laid flat on the floor as they started to compare whether the observed direction of rotations was different. They were doing what we wanted them to do, actually testing their hypothesis by experimenting.

One of the other principals, a person who had made it very clear

during preliminary discussions that classroom discipline was essential for learning, looked at her fellow principals, one standing on the table and the other flat on the floor, and said, "Oh, my, if I had walked into a classroom and had seen two boys doing what you are doing, I would have reprimanded the teacher." We all laughed, and I think they all understood that you don't need to keep students sitting quietly for them to be learning.



Hector Timourian describing to a student group the study of uptake of radionuclides by crabs in seawater.

"Mentoring is a wonderful thing because students come to the Lab, lift your spirits, and give you all sorts of positive strokes. There have been a number of people that I think have done very exceptionally well after they've gone through here."

Emilio Garcia

Learn from the Experienced

Richard G. Dong

In 1993, the Laboratory lost about 750 people as a result of a Voluntary Retirement Incentive Program (VRIP). Three years earlier, 750 people left the Laboratory in response to another retirement incentive offer. This meant the Laboratory lost roughly 1,500 experienced people in just 3 years.

John Nuckolls, the Laboratory Director at the time, gave a state-of-the-Laboratory address about the time VRIP was underway and invited folks to submit comments. I suggested to John that an "experience transfer" program be initiated for retirees to help young employees. My 30 years at the Laboratory had left lasting impressions, especially as to the value of long-term employees' experiences and the importance of not losing that knowledge.

John replied, "That is a great idea, Richard. Why don't you go ahead and do it?" My reaction was, "Gee, I didn't mean for me to do it. It was just an idea for someone else to do." But after thinking it over, I decided it would be an interesting postretirement challenge. And if it should fail, no one would be giving me a poor annual review or a bad raise. Besides, John had already arranged for Public Affairs, and later the Affirmative Action and Diversity Program (AADP), to give me a hand.

The Retiree Program was designed to help employees gain a head start in their careers by bringing them in touch with retirees and their vast, irreplaceable experiences. In return it provides retirees a way to help stay young by interacting with the young and to stay in touch with the Laboratory. All of it is accomplished through two Web sites. The level and the kind of help a retiree gives to an employee are strictly up to the two of them. It can range from simply answering a question by telephone or e-mail, to visiting the Laboratory, to reviewing an analytical solution. Employees have said that often they simply need a sounding board for their ideas.

After 2 years of working with the talents and help of AADP personnel as well as the support of folks in Benefits, Mail Services, and the Technical Information Department, the Retiree Program was launched in 1995 as a strictly voluntary venture and with no dedicated funding. Currently, 11 Laboratory programs are interested in the services of about 100 retiree participants. The main part, the part that makes it all work, is attributable to the interest, care, and generosity of the retirees. In the end, the credit for making the program work goes to them.

For more information on the program, go to <http://www.llnl.gov/aadp/retiree/Index.html>. or call AADP at (925) 422-9543.

It's a Bird, It's a Plane . . .

Dave Zalk and Richard Burbine

It's Ergo Man!

In the winter of 1995, I received a phone call from the Custodian group. It appeared that several custodians were being injured on the job. So they contacted Jack Tolley, a safety engineer in Engineering, and myself, the industrial hygienist for Plant Engineering, to come in and solve their problem.

For starters, the custodians looked in their training manual to see what was in there to help their peers. But they couldn't find anything.

The more we talked, the more we realized that they needed to do an ergonomic assessment of their own work. At the time, I had done some research into ergonomics, but there really was no method for workers

who go from place to place to do their work. Everything for ergonomics was based on a workstation or an assembly line.

That's when the idea of the Ergo Man video came into play. The custodians decided they wanted to do a video that would be part of a training package. In the video, "Professor" Tolley teaches a group of custodians about ergonomics, and when he's done teaching, the custodians go back to their jobs. But then Professor Tolley gets an ergo alert and turns into the Mighty Ergo Man. Each one of his alerts is something that he taught in the class.

We received funding in the amount of \$10,000 to make the video, and everyone at the Lab pitched in and lent us equipment. By doing it ourselves up to the final editing, we didn't spend much money. People let us borrow videotape



Ergo Man Jack Tolley.

equipment, lights from Plant Engineering, and trucks to move stuff around from set to set. Key people let us use different offices. In fact, we

ended up using only \$5,000 of the original funds; the rest of the money was used to produce copies of the video.

And the rest is history. The video was completed on February 14, 1997. Since then, approximately 550 custodial training packages that include the video have been made, and they've been shipped to at least 22 countries.

We even had a bloopers reel that was fantastic. In fact, it is so good that it has disappeared. We suspect foul play.